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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/698,970	10/27/2000	Joseph C. Liberti	APP 1206-US	8306

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EXAMINER
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LEE, JOHN J

ART UNIT	PAPER NUMBER
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2684

DATE MAILED: 02/13/2004

4

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/698,970

Applicant(s)

LIBERTI ET AL.

Examiner

JOHN J LEE

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 27 October 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 1 – 23** are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishii et al. (US Patent number 6,434,132) in view of Monch et al. (US Patent number 6,304,745).

Regarding **claim 1**, Ishii discloses that a method for establishing reliable communications between two points in a mobile wireless network (Fig. 1), wherein said first point comprises a first wireless node (1a in Fig. 1), said second point comprises a plurality of mobile wireless nodes (2a, 2b in Fig. 1), and said first node cannot directly reliable communicate with any one of said plurality of nodes at said second point (Fig. 1 and column 2, lines 39 – column 3, lines 5). Ishii teaches that transmitting a probe (control packet) from said first node (1a in Fig. 1) to said plurality of nodes (2a, 2b in Fig. 1) (Fig. 1, 4, abstract, and column 3, lines 41 – 65 where teaches parent node broadcasts the control packet to subnetwork (mobile nodes). Ishii teaches that forming a receive group (2a, 2b, 2c, 2d in Fig. 1), in reaction to receiving said probe (control packet), consisting of at least some of said plurality of nodes and based on the created mobile hosts and the received probe's signal quality (measure for interference) (column 4, lines 10 – 53 and Fig. 1, 4 where teaches the subnetwork (mobile nodes) received the

control packet from the parent node and requests a channel switchover to parent host as the interference of received signal has occurred). Ishii teaches that choosing a controlling node (2e, 2h in Fig. 1) from said receive group (Fig. 1) (Fig. 1, 5 and column 5, lines 10 – 42 where teaches the mobile host, which is free interference or noiseless node, can control the signal for broadcasting to another subnetwork (mobile nodes)). Ishii teaches that receiving at said receive group, under the control of said controlling node, subsequent signals transmitted by said first node (Fig. 1, 5 and column 5, lines 10 – 42 where teaches best received signal quality node can control to broadcast the control packet (transmitted by parent node) to another subnetwork (mobile nodes)).

Ishii does not specifically disclose the limitation “creating and adding a neighbor list each of said plurality of nodes”. However, Monch discloses the limitation “creating and adding a neighbor list each of said plurality of nodes” (Fig. 1, 3 and column 1, lines 60 – column 2, lines 25 where teaches called radio station created for calling radio station containing information on radio links to neighboring radio stations). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Ishii system as taught by Monch. Doing so would enhance the wireless communication reliability in mobile communication system.

Regarding **claim 2**, Ishii discloses that the receive group disbands once communication with said first node are complete (column 4, lines 10 – 53 and Fig. 4).

Regarding **claim 3**, Ishii discloses that the controlling node and members of said receive group are not predetermined (because the receive group is mobile nodes, can move anywhere)(column 2, lines 51 – column 3, lines 3 and Fig. 1).

Regarding **claim 4**, Ishii and Monch disclose all the limitation, as discussed in claim 1. Furthermore, Ishii further discloses that probing periodically by each of said plurality of nodes to determine nearby nodes (abstract, column 1, lines 46 – 64, and Fig. 1). Ishii teaches that negotiating transmission parameters with nearby nodes to establish reliable communications (column 4, lines 10 – 53 and Fig. 1, 4).

Regarding **claim 5**, Ishii and Monch disclose all the limitation, as discussed in claim 1. Ishii does not specifically disclose the limitation “transferring a representation of said subsequent signals received by each member of receiving group to said controlling node that combines said representations of said subsequent signals”. However, Monch discloses the limitation “transferring a representation (Fig. 3a) of said subsequent signals received by each member of receiving group to said controlling node (2 in Fig. 6) that combines said representations of said subsequent signals (Fig. 3a)” (Fig. 1, 3 and column 4, lines 53 – column 5, lines 18 where teaches each receiver transmits signal strength and node identification to create a table for reliable communication). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Ishii system as taught by Monch. Doing so would enhance the wireless communication reliability in mobile communication system.

Regarding **claim 6**, Ishii discloses that the step of combining is performed through incoherent signal combining (abstract, column 1, lines 46 – 64, and Fig. 1).

Regarding **claim 7**, Ishii discloses that the step of combining is performed through coherent signal combining (abstract, column 1, lines 46 – 64, and Fig. 1).

Regarding **claim 8**, Ishii discloses that the coherent signal combining is based on antenna array system (column 1, lines 46 – column 3, lines 11 and Fig. 1).

Regarding **claim 9**, Ishii discloses that transmitting second subsequent signals from said second point to said first node wherein said second subsequent signals originate from said controlling node (column 3, lines 41 – column 4, lines 53 and Fig. 4).

Regarding **claim 10**, Ishii and Monch disclose all the limitation, as discussed in claims 5 and 9. Furthermore, Ishii further discloses that transferring representations of said second subsequent signals from said controlling node to each member of said receive group (Fig. 1 and column 2, lines 51 – column 3, lines 32). Ishii teaches that combining said representations of said second subsequent signals at said first node thereby establishing a reliable signal (column 3, lines 41 – column 4, lines 53 and Fig. 4).

Regarding **claim 11**, Ishii and Monch disclose all the limitation, as discussed in claims 5 and 7.

Regarding **claim 12**, Ishii and Monch disclose all the limitation, as discussed in claims 5 and 6.

Regarding **claim 13**, Ishii and Monch disclose all the limitation, as discussed in claims 1 and 9.

Regarding **claim 14**, Ishii and Monch disclose all the limitation, as discussed in claims 5 and 10.

Regarding **claim 15**, Ishii and Monch disclose all the limitation, as discussed in claims 1 and 9.

Regarding **claim 16**, Ishii discloses that communication between said first and second point is a signal hop (Fig. 1A) within multi-hop network (Fig. 1B) (Fig. 1 and column 2, lines 39 – column 3, lines 11).

Regarding **claim 17**, Ishii and Monch disclose all the limitation, as discussed in claims 1 and 14.

Regarding **claim 18**, Ishii and Monch disclose all the limitation, as discussed in claims 1 and 9. Furthermore, Ishii further discloses that collectively receiving at said receive group, under the control of said second node, first subsequent signals transmitted by said first node (column 5, lines 10 – 42 and Fig. 1, 5 where teaches receiving group (2a, 2b, 2c, 2d) with including controlling parent host in the receiving group (2e, 2h) receives control packet from other parent host). Ishii teaches that collectively transmitting from said receive group, under the control of said second node, second subsequent signals destined for said first node (column 3, lines 41 – column 4, lines 53 and Fig. 4 where teaches receiving group (2a, 2b, 2c, 2d) with including controlling parent host in the receiving group (2e, 2h) transmits the interference condition signal to first parent host (1a, 1b)).

Regarding **claim 19**, Ishii and Monch disclose all the limitation, as discussed in claims 1 and 9. Furthermore, Ishii further discloses that forwarding by each member of group to the controlling subset of that group all messages received from said originating subset destined said second point (column 3, lines 41 – column 4, lines 53 and Fig. 4).

Regarding **claim 20**, Ishii and Monch disclose all the limitation, as discussed in claims 1 and 4.

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Regarding **claim 21**, Ishii and Monch disclose all the limitation, as discussed in claims 1 and 13.

Regarding **claim 22**, Ishii and Monch disclose all the limitation, as discussed in claims 1 and 19.

Regarding **claim 23**, Ishii and Monch disclose all the limitation, as discussed in claims 1 and 19.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Cheung et al. (US Patent number 5,901,362) discloses Connecting a Wireless LAN to a Wired LAN.

Haartsen (US Patent number 6,026,297) discloses Contemporaneous Connectivity to Multiple Piconets.

Any response to this action should be mailed to:

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or faxed to:

(703) 308-9051, (for formal communications intended for entry)

Or:

(703) 308-6606 (for informal or draft communications, please label  
"PROPOSED" or "DRAFT").



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Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **John J. Lee** whose telephone number is (703) 306-5936. He can normally be reached Monday-Thursday and alternate Fridays from 8:30am-5:00 pm. If attempts to reach the examiner are unsuccessful, the examiner's supervisor, **Nay Aung Maung**, can be reached on (703) 308-7745. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-4700.

J.L  
February 2, 2004

  
**NAY MAUNG**  
**SUPERVISORY PATENT EXAMINER**

John J Lee